

01  
a control system coupled to a first one of the stock areas for computing an empty percentage for the first stock area for each empty carrier type, the empty percentage for a particular carrier type being the percentage of bins of the first one stock area which contain empty carriers of the particular type; and

a transportation system responsive to the control system for selectively moving an empty carrier of a certain empty carrier type between a staging area and the first stock area based on a comparison of the empty percentage for the certain carrier type to the [one or more thresholds] at least one threshold of the first stock area for the certain empty carrier type.

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3. (Amended) The automated material handling system as recited in claim 1, wherein the [one or more thresholds] at least one threshold for the empty carrier of the certain carrier type [include] includes a maximum value and wherein the transportation system moves an empty carrier of the certain carrier type from the first stock area to the staging area if the maximum value is exceeded by the empty percentage of the certain carrier type.

4. (Amended) The automated material handling system as recited in claim 1, wherein the [one or more thresholds] at least one threshold for the empty carrier of the certain carrier type [include] includes a minimum value and wherein the transportation system moves an empty carrier of the certain carrier type to the first stock area from the staging area if the empty percentage of the certain carrier type falls below the minimum value.

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10. (Amended) A method for managing empty material carriers in an automated material handling system including a plurality of material carriers including empty material carriers and at least one [or more] stock [areas] area each including bins for storing material carriers, the method comprising:

classifying at least the empty material carriers into [two or more] at least two empty carrier types;

associating each of the stock areas with [one or more thresholds] at least one threshold for each carrier type;

93 computing an empty percentage for each empty carrier type for a first one of the stock areas, the empty percentage for a particular empty carrier type being the percentage of bins of the first one stock area which contain empty carriers of the particular type; and

selectively moving an empty carrier of a certain empty carrier type between a staging area and the first stock area based on a comparison of the empty percentage for the certain carrier type for the first stock area to the [one or more thresholds] at least one threshold of the first stock area for the certain carrier type.

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94 12. (Amended) The method of claim 10, wherein the [one or more thresholds] at least one threshold for the empty carrier of the certain carrier type [include] includes a maximum value and wherein selectively moving the empty carrier of the certain carrier type from the first stock area to the staging area includes moving the empty carrier of the certain carrier type if the maximum value is exceeded by the empty percentage of the certain carrier type.

13. (Amended) The method of claim 10, wherein the [one or more thresholds] at least one threshold for the empty carrier of the certain carrier type [include] includes a minimum value and wherein selectively moving the empty carrier of the certain carrier type to the first stock area from the staging area includes moving the empty carrier of the certain carrier type if the empty percentage of the certain carrier type falls below the minimum value.

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95 19. (New) An automated material handling system, comprising:  
a plurality of wafer carriers including a plurality of empty carriers classified into at least two empty carrier types;  
at least one stock area each including a plurality of bins for storing wafer carriers, wherein each stock area is associated with a predetermined quantity for each empty carrier type;  
a control system coupled to a first one of the stock areas for computing an empty percentage for the first stock area for each carrier type, the empty percentage for a particular carrier type being the percentage of bins of the first one stock area which contain empty carriers of the particular type; and